IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

CAPELLA PHOTONICS, INC.

Plaintiff,

v.

FUJITSU NETWORK COMMUNICATIONS, INC.,

Defendant.

Case No. 2:20-cv-00076-JRG

CAPELLA PHOTONICS, INC.

Plaintiff,

v.

INFINERA CORPORATION, TELLABS, INC., TELLABS OPERATIONS INC., CORIANT AMERICA INC., and CORIANT (USA) INC.,

Defendants.

Case No. 2:20-cv-00077-JRG

PLAINTIFF CAPELLA PHOTONICS, INC.'S OPENING CLAIM CONSTRUCTION BRIEF

NOTES ON CITATIONS

- The patents-in-suit, U.S. Patent Nos. RE47,906 ("the '905 patent") and U.S. Patent No. RE47,906 ("the '906 patent") are attached as Exhibits 1 and 2, respectively, to the Declaration of Christopher Wanger, filed herewith.
- References to the patents-in-suit are indicated by column and line number, or by claim number. For example, "'905, 4:3-10" refers to Column 4, lines 3-10 of the '905 patent. All emphases to patent citations are added unless otherwise noted. Further, where material is identical in both patent specifications, only one citation is provided.
- References to additional exhibits attached to the Declaration of Christopher Wanger are designated "Wanger Decl., Ex.", followed by the exhibit number.
- The Declaration of Alexander Sergienko in support of plaintiff Capella Photonics, Inc.'s ("Capella's") claim constructions is also filed herewith. References to Dr. Sergienko's declaration are designated "Sergienko Decl." followed by the paragraph number. References to exhibits attached to Dr. Sergienko's Declaration as designated "Sergienko Decl., Ex.," followed by the exhibit number.

I. INTRODUCTION

The parties' proposals reflect fundamentally different approaches to claim construction. Capella construes terms in accordance with their plain meanings in light of the surrounding claim language, the specification, and the remainder of the intrinsic evidence as required by *Phillips v. AWH Corp*. In contrast, Defendants make little effort to ascertain plain meaning and largely ignore the surrounding claim language, and instead: (1) seek limit each claim term to one or more embodiments in the specification; and/or (2) assert the provisions of 35 U.S.C. §112(f)/¶6 should apply even though the words "means for" are never used and structure is used in the claims in every instance. Defendants also tellingly reverse position in connection with the claim terms "port(s)" and "fiber collimators…providing… port(s)" – asserting that the PTAB's BRI interpretation should be used (where the PTAB ruled that the broadest reasonable interpretation of the claims did not call for fiber collimators providing and serving as ports), even though BRI is not used in district court proceedings and the specification, claims, and prosecution history all clearly and consistently establish that the inventors intended these terms to be limited to fiber collimators.

II. LEGAL STANDARDS

A. Claim Construction

Claim construction is a matter of law to be determined by the Court. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995)(*en banc*), *aff'd*, 517 U.S. 370 (1996). The words of a claim should be given their ordinary and customary meaning to "persons of skill in the art in question at the time of the invention, *i.e.*, at about the effective filing date of the patent application." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005)(*en banc*). To determine the meaning to a person of ordinary skill, "the court should look first to the

intrinsic evidence of record, *i.e.*, the patent itself, including the claims, the specification and, if in evidence, the prosecution history. Such intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language." *Liquid Dynamics Corp. v. Vaughan Co.*, 355 F.3d 1361, 1367 (Fed. Cir. 2004)(quoting *Vitronics Corp. v. Conceptronic Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). In addition to intrinsic evidence, a court may rely on extrinsic evidence, such as dictionaries, treatises, and experts, to shed light on the claimed technology. *Phillips,* 415 F.3d at 1317-1318. "Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim. The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction." *Phillips,* 415 F.3d at 1316.

In stark contrast, during patent original patent prosecution, prosecution of reissues, and IPR proceedings, the U.S. Patent Trial and Appeal Board ("PTAB") and the U.S. Patent and Trademark Office ("USPTO") give (or at least gave at all relevant times hereto) patent claims their broadest reasonable interpretation consistent with the specification. Different claim constructions are therefore likely to arise with frequency between the USPTO and the PTAB (on the one hand), and district courts (on the other hand) as a result of these different standards. *See, e.g., PPC Broadband, Inc. v. Corning Optical Communications RF LLC* 815 F.3d 734, 740-43 (Fed. Cir. 2016)(finding a PTAB construction under the broadest reasonable construction standard correct, even though it would not be the correct construction under a *Phillips* standard).

B. Means Plus Function ("MPF")

Defendants incorrectly assert that many elements are so-called "means plus function" elements. Means plus function claiming allows the drafter to claim the invention based solely on

functionality (*e.g.*, "means for adding") rather than structure (*e.g.*, "processor") within the body of the claim itself. It is not the presence of functionality, but rather the absence of structure corresponding to functionality in the claim language that triggers MPF claim construction. To illustrate, "means for adding" is MPF language, but "a processor for adding" is not because a "processor" is structure known to those in the computing arts.

The hallmark of MPF claiming is the presence of "means for" in the claim in place of structure followed by a function for the "means." A claim limitation that lacks the term "means" creates a rebuttable presumption that the provisions of 35 U.S.C. §112(f)/(6) do not apply. *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1348-49 (Fed. Cir. 2015)(en banc). This presumption may only be overcome if the claim fails to recite "sufficiently definite structure" or else merely recites a "function without reciting sufficient structure for performing that function." *Zeroclick, LLC v. Apple Inc.*, 891 F.3d 1003, 1007 (Fed. Cir. 2018).

Defendants bear the burden of overcoming this presumption by a preponderance of the evidence. *Zeroclick*, 891 F.3d at 1007. The essential inquiry is whether the words of the claim are understood by persons of skill in the art to have a sufficiently definite meaning as the name for structure. A limitation has sufficient structure when it recites a claim term with a structural definition that is either provided in the specification or generally known in the art. *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1299 (Fed. Cir. 2014). The limitation need not connote a single, specific structure; rather, it may describe a broad class of structures. *Id.* at 1300; *Smartflash LLC v. Apple Inc.*, 77 F. Supp.3d 535, 541-43 (E.D. Tex. 2014)("processor" is a structure-connoting term). It may also identify structures by their function (incorporating functional language does not automatically convert the words into means for performing such functions, as many devices take their names from the functions they perform, *e.g.*, filter, brake, clamp,

screwdriver, lock). *Zeroclick*, 891 F.3d at 1007; *Apple*, 757 F.3d at 1299. *See also*, *Skky, Inc. v. MindGeek, s.a.r.l.*, 859 F.3d 1014 (Fed. Cir. 2017). For example, in *TecSec, Inc. v. International Business Machines Corp.*, 731 F.3d 1336, 1347 (Fed. Cir. 2013), the claimed "system memory means" and "digital logic means" did not invoke MPF treatment. There, the court explained that "a system memory is a specific structure that stores data," and digital logic means was specifically disclosed in the specification to be "comprised of structural elements, including a system memory and specific modules and subsystems." Structure may also be provided by describing the claim limitation's operation (*i.e.*, how the function is achieved in the context of the invention), such as its input, output, or connections. *Apple*, 757 F.3d at 1299-1300.

C. Indefiniteness

Defendants also incorrectly assert that some claim terms are indefinite. Indefiniteness must be proven by clear and convincing evidence. *Sonix Tech. Co., Ltd. v. Publ'ns Int'l, Ltd.*, 844 F.3d 1370, 1377 (Fed. Cir. 2017). The test is whether a person of skill in the art would understand the scope of the claim with "reasonable certainty" after reading it in light of the specification and the prosecution history. *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S.Ct. 2120, 2124 (2014). This standard represents a balance that takes into account the inherent limitations of language and the need to afford clear notice of what is claimed, while also recognizing that "absolute precision is unattainable" and that "some modicum of uncertainty...is the 'price of ensuring appropriate incentives for innovation.'" *Id.* at 2128-29 (quoting *FestoCorp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 732 (2002)).

III. OVERVIEW OF THE FIELD OF TECHNOLOGY

Overviews of the technology and the patents-in-suit are set forth in the Sergienko Decl., ¶¶26-80. In short, telecommunications companies use optical fiber to transmit and receive

communications signals. Various wavelengths of light, each carrying data intended for delivery to a specific location on a network, simultaneously travel along each optical fiber. This wavelength-division multiplexing ("WDM") approach allows companies to expand the capacity of their networks without the cost of laying additional fiber. However, WDM poses severe technical challenges, as each spectral channel must be individually routable to a desirable location. The ability to add one or more new wavelength channels to an existing WDM signal and/or to remove one or more channels from the existing WDM signal at network nodes or hubs requires the use of an optical add-drop multiplexer ("OADM"). In addition to traffic routing, OADMs can have the ability to control the output power of the channels to provide equalization. *See* Sergienko Decl., ¶¶26-36.

Certain OADMs perform switching and power control activities by steering light beams using beam-deflecting elements, which can include, but are not limited to, small tilting mirrors commonly referred to as microelectromechanical systems ("MEMS") and other beam deflecting elements. In the case of MEMs, varying the tilt of a MEMS mirror can reflect an incident light beam to a different output port. It can also effectively control the power through a controllable amount of misalignment. The tilt of the mirrors (between the minimum and maximum angles of operation) is controllable, meaning capable of being controlled, by varying the control voltage applied to the mirrors. At the time of the invention, there were two approaches. The first "digital" approach was simple, as the mirrors could be set to only two positions – corresponding to on/pass and off/drop. In the contrasting "analog" approach, the provided voltages allowed the mirrors to be set to many positions corresponding to multiple output ports. *See* Sergienko Decl., ¶¶37-41 & 49-52.

Also at the time of the invention, demand for optical switching systems was increasing as much as 400% per year, and thus the industry was trying to incorporate more input and output ports while keeping costs down. Many OADM systems were limited to two ports, and thus often used peripheral devices, such as optical circulators, to separate incoming and outgoing signals on each port. However, optical circulators cannot separate optical signals having different wavelengths, limiting their scalability. They also lack the capability for an optical signal to travel backwards on the same port as a signal traveling forward, limiting system architecture. *See* Sergienko Decl., ¶¶42-46.

The inventors of the patents-in-suit appreciated the limitations of circulator-based optical switches. They also recognized that continuous control of beam-deflecting elements could enable deflection to multiple spectral output ports without using circulators. In other words, constant or active control of the elements could allow scanning a spectral channel across all possible output ports – a major improvement over the two-state "digital" system. *See* Sergienko Decl., ¶¶47 & 53-71.

IV. DEFINITION OF A PERSON OF ORDINARY SKILL IN THE ART

A person having ordinary skill in the art ("POSA") would have had a Master of Science degree in electrical engineering, physics, or an equivalent field, as well as at least three years of industry experience designing optical systems. Less education could be compensated by more direct experience and vice versa. *See* Sergienko Decl., ¶¶20-22.

V. CONSTRUCTION OF THE DISPUTED CLAIM TERMS

A. "PORT(S)"/"FIBER COLLIMATORS…PROVIDING…PORT(S)" ('905: 1, 15, 16, 19, 23, 27–28, 32, 39, 45, 47, 49, 51; '906: 1, 21, 31, 37, 44, 61, 68–70, 72, 80, 87, 89–90, 92, 100, 115–118, 126, 131, 133–137)

Capella's Proposed Construction	Defendants' Proposed Construction
Fiber collimator port(s) Fiber collimators providing and serving as port(s)	Plain and ordinary meaning

The parties dispute whether the terms "port(s)" and "fiber collimators…providing… port(s)" are limited to fiber collimator port(s) and fiber collimators providing and serving as port(s), respectively. The evidence, including the intrinsic evidence, makes clear the claimed "ports" in the claims are "fiber collimator ports" (*e.g.*, optical lenses) that provide inputs and outputs to the free space optical switching system.[1] Claim 1 from the '905 patent is illustrative:

'905:1. An optical add-drop apparatus comprising:

[a] an input port for an input multi-wavelength optical signal having first spectral channels; one or more other ports for second spectral channels; an output port for an output multi-wavelength optical signal;

[b] a wavelength-selective device for spatially separating said spectral channels;

[c]a spatial array of beam-deflecting elements positioned such that each element receives a corresponding one of said spectral channels, each of said elements being individually and continuously controllable in two dimensions to reflect its corresponding spectral channel to a selected one of said ports and to control the power of the spectral channel reflected to said selected port.

The '905 and '906 patents (as well as U.S. Patent Nos. RE42,368 ("the '368 patent") and RE42,678 ("the '678 patent")) generally discuss two classes of ports: input ports and output ports. In the '905 and '906 patents, the ports are fiber collimator ports. Fiber collimators are used to transform the light output from an optical fiber into a free-space collimated beam, and likewise from free space onto a an optical fiber (they are bi-directional). In principle, a simple collimation lens is sufficient for that purpose. (Wanger Decl., Ex. 14, pp. 67:12-68:21).

The ports are depicted, for example, in Figure 1A:

[1] "Provide" means to supply or make available. (Wanger Decl., Ex. 5).

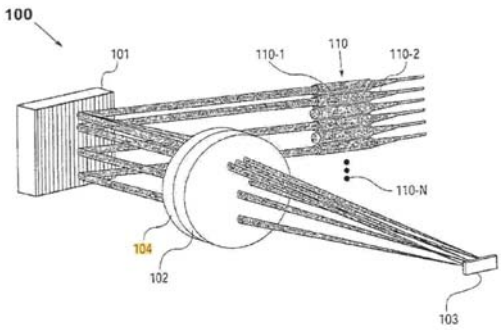


Fig. 1A

In the preferred embodiment of Figure 1A, the fiber collimators are arranged in an array 110. The patents provide: "the WSR apparatus 100 comprises multiple input/output ports which may be in the form of an array of fiber collimators 110, providing an input port 110-1 and a plurality of output ports 110-2 through 110-N (N≥3)…" ('905, 7:4-7). As can be seen, the fiber collimators in the array 110 transform the light from the array of optical fibers into free-space collimated beams of light (and vice versa). *See* Figure 1D. In the preferred embodiment of Figure 1A, the collimated beams are directed to an array of channel micromirrors 103. The "channel micromirrors" reflect their corresponding spectral channels back to a selected one of ports where the collimated beam is launched into a fiber. *See* Claim '905:1 element [c].

In '905 claim 1 and other similar claims, the term "port(s)" was used. In '906 claim 1 and other similar claims, the term "fiber collimators providing port(s)" was used. In both cases, the correct interpretation of the claims under *Phillips* is "fiber collimator port(s)" and "fiber collimators providing and serving as port(s)." A POSA at the time of the invention would have understood the term "port" in the original claims of the '368 and '678 patents to mean fiber collimator ports or fiber collimators serving as ports. *See* Sergienko Decl., ¶158. The support for this construction is heavy.

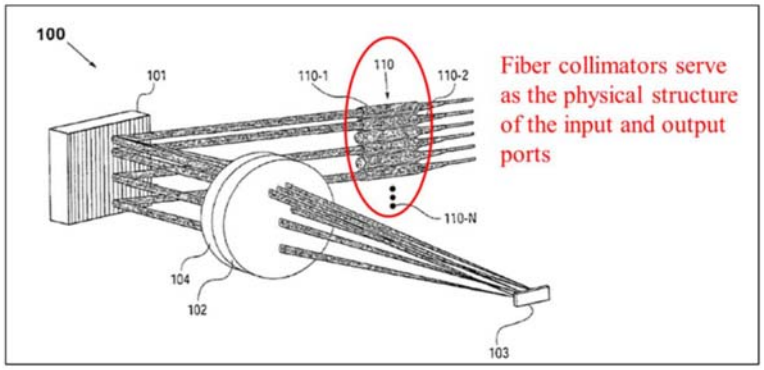
First, the Summary of the Invention expressly provides that fiber collimators *serve* as *both* the input ports and the output ports. According to the very first sentence of the Summary,

"[t]he present invention…employ[s] an array of fiber collimators *serving as* an input port and a plurality of output ports." ('905, 3:66-4:2). The appearance of this description in the very first sentence of the Summary of the Invention would lead a POSA to believe that the invention as a whole was limited to input and output fiber collimator ports or fiber collimators serving as ports, and that the ports must be fiber collimator ports or fiber collimators serving as ports. This is particularly true here, where the ports provide collimated beams of light into and out of free space for free space optical switching.

Additionally, the fiber collimator structure provided for "port" in the Summary of the Invention is consistent with the characterization of port in the specifications as a whole. A POSA would understand that the patentee was not merely providing examples of the invention, but rather that the patentee intended for the ports to have a fiber collimator physical structure as stated in the first sentence of the summary of the invention. Indeed, the specifications as a whole are without ambiguity on this issue – fiber collimators serve as the physical structure of the claimed ports. The specification repeatedly makes this relationship clear. *See, e.g.*, '905, 4:37-38 ("The fiber collimators serving as the input and output ports"); 8:53 ("the fiber collimator serving as the output port"); 9:20-21 ("The fiber collimators serving as the input and output ports"); 9:38-39 ("the fiber collimators (serving as the input and output ports)"); 10:49-52 (In FIG. 3, "the one-dimensional fiber collimator array 110 of FIG. 2B is replaced by a two dimensional array 350 of fiber collimators, providing for an input-port and a plurality of output ports."); 11:5-6 ("the fiber collimators that provide for the input and output ports"); *see also* 2:59 ("port/fiber"); 11:7 (output ports have a "fiber core").

Similarly, this physical characterization of "port" as a "fiber collimator" is also set forth in the description of the figures. The specifications explain that Figure 1A depicts an apparatus

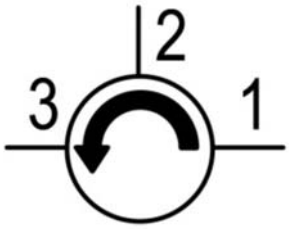
that includes "an array of fiber collimators 110, providing an input port 110-1 and a plurality of output ports 110-2 through 110- N (N≥3)." ('905 patent, 7:5-7). In discussing 110-1 through 110-N, the specifications use the term "port" and its physical "fiber collimator" structure interchangeably. *See, e.g.*, '905, 7:6 ("input port 110-1"); 7:6-7 ("output ports 110-2 through 110-N"); 8:36-37 ("output ports 110-2 through 110-N"); 10:32-33 ("fiber collimators 110-1 through 110-N"); 10:39-40 ("fiber collimators 110-1 through 110-N"). Thus, both the description of the figure and the description of the figure's components (110, 110-1 through 110-N) delineate the physical structure of "port" as a fiber collimator. An annotated version of Figure 1A is reproduced below



The physical delineation of ports as fiber collimators was also recited in the original claims of the '368 and '678 patents before the issuance of the patents-in-suit. For example, independent claims 1 and 21 of the '678 patent recited that the physical structure of the claimed ports is multiple fiber collimators: "multiple fiber collimators, providing an input port for a multi-wavelength optical signal and a plurality of output ports." ('906, 14:43-45 (claim 1); 16:2-4 (claim 21)). Likewise, independent claims 31, 37, and 44 of the '678 patent recited that the physical structure of the claimed ports is an array of fiber collimators: "an array of fiber collimators, providing an input port for a multi wavelength optical signal and a plurality of output ports." *See* '906, 16:57-59 (claim 31); 17:35-37 (claim 37); *see also* 18:18-21 (claim 44)

("an array of fiber collimators, providing an input port for a multi wavelength optical signal and a plurality of output ports including a pass-through port and one or more drop ports"). And claim 55 recited that the physical structure of the claimed ports is multiple auxiliary fiber collimators: "multiple auxiliary fiber collimators, providing a plurality of auxiliary input ports and an exiting port." ('906, 19:15-16 (claim 55)).

Fiber collimator ports are distinct from the openings on "circulators." Defendants assert the circulator openings are "ports," but they do not provide free-space collimated beams of light. A circulator accommodates three fibers. Light traveling in the fiber into opening 1 will emerge from a fiber on opening 2, light traveling in the fiber into opening 2 will emerge from a fiber on opening 3, and light traveling in the fiber into opening 3 will emerge from a fiber on opening 1.



See, *e.g.*, Wanger Decl., Ex 13, pp. 2 & 6-7; Ex. 15, pp. 12-13.

Defendants assert that the circulator openings are "ports," but that is not correct. The specifications consistently distinguish between ports and circulators. They never use the two terms interchangeably, or suggest that one is subsumed within the other. Circulators are not mentioned a single time when the actual invention is being discussed: there is not one mention of circulators in the Summary of the Invention, the Detailed Description of the Invention, or the claims. And, nowhere do the patents indicate that circulators are the same as, or can be subsumed within ports.

Indeed, the patents' only mention of circulators is in the background section's discussion of the state of the art and the *problems* with the art's use of circulators. Importantly, the patents

expressly discourage the use of circulators, explaining that "the optical circulators implemented in [a prior art system] for various routing purposes introduce additional optical losses, which can accumulate to a substantial amount." ('905, 3:2-5). This would also lead a POSA to believe the claimed ports must be fiber collimator ports, as the fiber collimator structure rules out circulators.

Moreover, even when discussing circulators in the prior art, the patents describe the circulators as being coupled to, rather than part of, ports. For example, in discussing a prior art system, the patents explain that "[a]n optical circulator is therefore *coupled to* the input port." *See* '905, 2:44-45; *see also, id*. at 2:48-49 ("An additional optical circulator is thereby *coupled to* the output port"); 3:13-32 (discussing a piece of prior art that has "input, output, drop and add ports" and no "additional optical components (such as optical circulators…)"). Because the circulator in the prior art system is described as separate from the port or "coupled to" the port, it is again clear the circulator is not the same as or encompassed by the port. In view of the specification's consistent differentiation between ports and circulators, a POSA reading the specification would not equate circulator with port. *See* Sergienko Decl., ¶¶167-68.

A POSA would also understand that Capella clearly and unmistakably defined the term "port" in the IPRs for the '678 and '368 patents to mean fiber collimator ports or fiber collimators serving as ports. During the IPRs, Capella submitted briefing and declarations in which it defined ports, as stated, and distinguished and disavowed circulators from the definition of ports. For example, in the Patent Owner Response for the IPR of the '368 patent initiated by Cisco (IPR 2014-01166), in order to overcome prior art, Capella defined the claims as being limited to fiber collimators serving as ports, and excluded circulator ports from the definition. Among other things, Capella argued:

> The '368 Patent explicitly labels the ports "collimators" and says throughout the specification that collimators serve as the ports. The ports in the '368 Patent are

> **not** circulator ports. Construing the claimed ports to read on optical circulator ports is contrary to the '368 Patent and undermines the capabilities of the '368 Patent brought to the industry."

(Wanger Decl., Ex. 13, p. 7).

* * *

> In addition to the combination of embodiments of Bouevitch and the combination of Bouevitch and Smith being non-obvious, the Board should uphold patentability *because* Bouevitch's circulators cannot meet **the claimed ports, *i.e.*, collimators".**

(*Id*. at pp. 31-32)(emphasis added).

The evidence above, including the weighty intrinsic evidence, makes clear the claimed "ports" in the claims are "fiber collimator ports" (*e.g.*, optical lenses) that provide inputs and outputs to the free space optical switching system.

B. **"BEAM-DEFLECTING ELEMENT(S)"** ('905: 23–25, 27, 28, 31, 35, 46, 47, 49, 51–54; '906: 133, 134, 139)

Capella's Proposed Construction	Defendants' Proposed Construction
Capella asserts that this term needs no construction. Plain and ordinary meaning or, if there is disagreement, mirrored or reflective parts of a beam deflector. Further, Capella specifically disagrees that construction under 35 U.S.C. §112(f)/¶6 is appropriate. Not indefinite.	35 U.S.C. § 112(6) applies as follows: Functions: See 4-3 Joint Statement; Structure: Moveable silicon micromachined mirrors, moveable reflective ribbons, or moveable reflective membranes. Alternatively, indefinite. To the extent the court disagrees that 35 U.S.C. § 112(6) applies: moveable reflective element(s) of a beam deflector.

The terms "beam defecting elements" are well-known and need no construction: (1) "beam" refers to light beams; (2) "deflecting" refers to reflecting or otherwise changing the path of a light beam; and (3) "elements" refers to constituent parts of the array. "Beam-deflecting elements" ("BDEs") are therefore mirrored or reflective parts of a beam deflector array. *See* Sergienko Decl., ¶91.

Defendants' attempt to narrow this plain meaning, and to import additional limitations from preferred embodiments disclosed in the specification, is misplaced. In particular, the claims do not require the BDE to be "movable." In the '905 and '906 patent specifications, some claims specify that the BDE are "controllable" in two dimensions – but the claims never specify that the BDE are "movable." It would be clear error to add the requirement that the beam deflecting elements are moveable.

The Defendants also incorrectly assert that the term "beam-deflecting elements" is subject to 35 U.S.C. §112(f)/¶6, and if so, whether there is corresponding structure in the specification.

Defendants' reliance on a means-plus-function ("MPF") construction is misplaced. None of the claims use "means for." The claims also fail to recite a function for the BDE to perform. As such, the provisions of §112(f)/(6) are presumed inapplicable. Moreover, the claims clearly specify structure – an array of beam deflector elements. A POSA would certainly understand what is claimed when the claims are read in light of the '905 and '906 specifications. *See* Sergienko Decl., ¶95. In preferred embodiments, multiple examples of beam deflecting elements known to a POSA are described. For example, "[t]he channel micromirrors may be provided by silicon micromachined mirrors, reflective ribbons (or membranes), or other types of beam-deflecting elements known in the art." ('905 patent, 9:22-25). As discussed above, the limitation need not connote a single, specific structure; it may describe a broad class of structures, and even identify those structures by their function (*e.g.*, *filter, lock*). *See*, *e.g.*, *TecSec*, 731 F.3d at 1347.

Even if an MPF construction was somehow required, the term BDE is not indefinite. The '905 and '906 specifications in preferred embodiments describe micromirrors 103. Indeed, an

array of channel micromirrors is depicted throughout the figures of the '905 and '906 patents, including FIGs 1A & 1B, the latter of which is shown below:

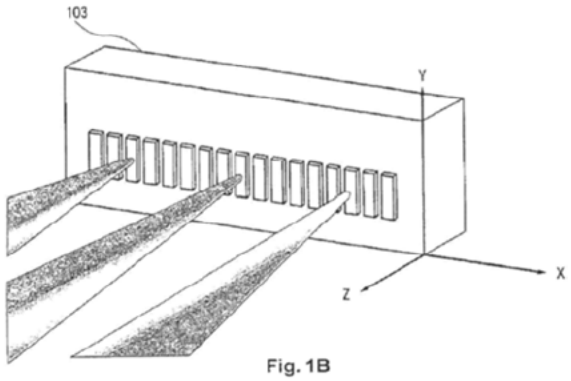


Fig. 1B

As a result, the Court should apply the plain and ordinary meaning of the term or, if there is disagreement, adopt Capella's proposed construction.

C. <u>"SAID ELEMENTS BEING…CONTROLLABLE"/"CONTROLLING…SAID BEAM-DEFLECTING ELEMENTS"/ "CONTROLLING SAID BEAM-DEFLECTING ELEMENTS"/"CONTROLLING SAID OTHER BEAM-DEFLECTING ELEMENTS"/"SAID CHANNEL MICROMIRRORS BEING…CONTROLLABLE"</u> ('905: 23–25, 47, 49, 51, 52; '906: 68, 89, 100, 115, 133)

Capella's Proposed Construction	Defendants' Proposed Construction
Capella asserts that this term needs no construction. Plain and ordinary meaning or, if there is disagreement, controllable means capable of being controlled.	Said elements being movable/moving said beam-deflecting elements/moving said beam-deflecting elements/moving said other beam-deflecting elements/said channel micromirrors being movable

The parties dispute whether the "controllable" terms should have their plain meaning as confirmed by the specifications (Capella), or whether they should have additional limitations imported from some of the embodiments (Defendants). Contrary to Defendants' proposed construction, controllable does not mean moveable. *See*, *e.g.*, '905, 7:20-21 ("The channel micromirrors 103 are individually controllable *and* movable…"). Where motion is required, as

in claims that specify rotation and/or pivoting, it is expressly stated. *See*, *e.g.*, '906, claims 68, 76, 77, 95, 103, 111, 112, 115, 121, 127 & 128.

D. "SAID ELEMENTS BEING…CONTINUOUSLY CONTROLLABLE"/ "CONTROLLING…CONTINUOUSLY SAID BEAM-DEFLECTING ELEMENTS"/"CONTINUOUSLY CONTROLLING SAID BEAM-DEFLECTING ELEMENTS"/"SAID CHANNEL MICROMIRRORS BEING…CONTINUOUSLY CONTROLLABLE" ('905: 23, 47, 49, 51, 52; '906: 68, 100, 115, 133)

Capella's Proposed Construction	Defendants' Proposed Construction
Capella asserts that this term needs no construction. Plain and ordinary meaning or, if there is disagreement, continuously controllable means capable of constant or uninterrupted control.	Said elements being movable by analog and not step-wise control/moving by analog and not step-wise control said beam-deflecting elements/moving by analog and not step-wise control said beam-deflecting elements/said channel micromirrors being movable by analog and not step-wise control.

Capella's construction of the "continuously" controllable terms similarly accords with the plain meaning of those terms as informed by the claims and specification. Various claims of the '905 and '906 patents specify that the BDE (or channel micromirrors) are "continuously" controllable. "Continuously" is an adverb that modifies "controllable." A POSA would understand "continuously" controllable to refer to constant control – as the plain and ordinary meaning suggests. Where "continuously controllable" is used, the claims require the BDE to be capable of constant or continuous control. Where "controlling… continuously" and "continuously controlling" are used in method claims of the patents, they require "actively controlling" the BDE. *See* Sergienko Decl., ¶100.

Continuous is used in the ordinary sense, to indicate uninterrupted control of the BDE. *See* Wanger Decl., Ex. 6 (https://www.merriam-webster.com/dictionary/continuous)("marked by uninterrupted extension in space, time, or sequence"); Wanger Decl., Ex. 7(Google search for

continuous)("forming an unbroken whole; without interruption"). This was a major improvement over two-state on/off "digital" systems. *See*, Sergienko Decl., Ex. B, pp. 118-19.

The inventors of the '905 and '906 patents aligned a plurality of fiber collimator ports, a diffraction grating, a lens, and a micromirror array in a configuration capable of directing an input light beam to multiple output ports. *See*, *e.g.*, FIG 1A. In a preferred embodiment, constant or continuous control of channel micromirrors allowed the position of the mirror to be continuously adjusted to direct corresponding channels to all possible output ports.

> As described above, a unique feature of the present invention is that the motion of each channel micromirror is individually and continuously controllable, such that its position, *e.g.*, pivoting angle, can be continuously adjusted. This enables each channel micromirror *to scan its corresponding spectral channel across all possible output ports and thereby direct the spectral channel to any desired output port*.

('905, 8:38-45).[2] *See* Sergienko Decl., ¶101.

Contrary to Defendants' proposed construction, continuously does not mean "not stepwise." There is no "step-wise" definition or discussion in the patent, and there is no discussion of excluding "step-wise" rotation. The term "step-wise" does not appear at all. "Not stepwise" is at odds with the normal use of the term, which includes uninterrupted extension in "sequence." *See* Sergienko Decl., ¶102; Wanger Decl., Ex. 6 (https://www.merriam-webster.com/dictionary/continuous)("marked by uninterrupted extension in … sequence").

Additionally, "stepwise" is within the invention, and not excluded, as a POSA would recognize that the rotational angle can be set in many states or steps (as discussed above) to

[2] *See also*, '905, 4:19-26 ("A distinct feature of the channel micromirrors in the present invention, in contrast to those used in the prior art, is that the motion, *e.g.*, pivoting (or rotation), of each channel micromirror is under analog control such that its pivoting angle can be continuously adjusted. This enables each channel micromirror to scan its corresponding spectral channel across all possible output ports and thereby direct the spectral channel to any desired output port.").

reflect the spectral channels into selected ones of the output ports. *See* Sergienko Decl., ¶103. For example, a person walking up or down a flight of stairs is taking one step at a time, but it is still in continuous motion between floors. *See* Wanger Decl., Ex. 14, pp. 169:20-170:10.

E. "SAID [BEAM-DEFLECTING] ELEMENTS BEING…CONTROLLABLE IN TWO DIMENSIONS"/ "CONTROLLING SAID BEAM-DEFLECTING ELEMENTS IN TWO DIMENSIONS" ('905: 23, 47, 49, 51; '906: 133)

Capella's Proposed Construction	Defendants' Proposed Construction
Capella asserts that this term needs no construction. Plain and ordinary meaning or, if there is disagreement, dimension means a direction or quality.	Said [beam-deflecting] elements (as construed) are rotatable about two axes/ rotating said beam-deflecting elements (as construed) about two axes.

Several '905 patent claims specify BDE that are "controllable in two dimensions." Further, claim 133 of the '906 patent specifies a method that includes "controlling" BDE "in two dimensions."

As discussed above, controllable does not mean movable – let alone rotation about two axes. Where motion is required, as in claims that specify rotation and/or pivoting of micromirrors, it is expressly stated. *See*, *e.g.*, '906, claims 68, 76, 77, 95, 103, 111, 112, 115, 121, 127 & 128. Further, the term "dimension" is used in the ordinary sense to refer to a direction or quality. *See* Wanger Decl., Ex. 8 (https://www.merriam-webster.com.dictionary/dimension)(one of several coordinates for determining a position in space and time). Contrary to Defendants' proposed construction, the claim language "controllable in two dimensions" and "controlling…in two dimensions" is not limited to a preferred embodiment where there is rotation of a mirror about an axis.

A POSA would understand that claims including beam-deflecting element limitations were written to capture a broader invention – where the elements are controllable in two

dimensions – e.g., X, Y, Z, time, etc. They are not described as being moveable or rotatable, as some beam-deflecting elements, including some expressly mentioned in the specification (*e.g.*, ribbons), do not rotate about two axes. ('905, 9:22-25). *See* Sergienko, ¶¶106-08. Other claims (primarily certain independent claims of the '906 patent) were written to a narrower invention, where the claims specify "channel micromirrors being pivotal about two axes and being individually and continuously controllable." In those claims, motion (pivoting) and controllability are specified. Thus, a POSA would understand that motion is not a component of controllability.

F. "A CONTROL UNIT FOR CONTROLLING EACH OF SAID BEAM-DEFLECTING ELEMENTS" ('905: 24)

Capella's Proposed Construction	Defendants' Proposed Construction
Capella asserts that this term needs no construction. Further, Capella specifically disagrees that construction under 35 U.S.C. §112(f)/¶6 is appropriate. Plain and ordinary meaning or, if there is disagreement, a controller capable of manipulating each beam-deflecting element. Not indefinite. *See above* for beam deflecting elements.	35 U.S.C. § 112(6) applies as follows: Function: Controlling each of said beam-deflecting elements; Structure: Indefinite To the extent the court disagrees that 35 U.S.C. § 112(6) applies: A control unit for controlling (as construed) each of said beam-deflecting elements (as construed)

The parties dispute whether this limitation of claim 22 of the '905 patent is subject to 35 U.S.C. §112(f)/¶6, and if so, whether there is corresponding structure in the specification.

Because claim 24 does not use the word "means," it is presumed that the provisions of 35 U.S.C. §112(f)/¶6 do not apply.

The term "control unit" also recites sufficiently definite structure to skilled artisans, namely a controller. *See*, *e.g.*, *Apple*, 757 at 1299 (a limitation has sufficient structure when it

recites a claim term with a structural definition that is generally known in the art). A controller is a foundational building block of optical systems, and is well-known in the art. *See* Sergienko, ¶¶109 & 112. It therefore needs no construction. In computing and especially computer hardware, a controller is a chip (such as a microcontroller), an expansion card, or a stand-alone device that interfaces with a more peripheral device. *See* Wanger Decl., Ex. 9 (https://en.wikipedia.org/wiki/Controller). This may be a link between two parts of a computer (for example, a memory controller that manages access to memory for a computer) or a controller on an external device that manages the operation of (and connection with) that device. The peripheral device in the context of the invention is the array of beam-deflecting elements. Again, the limitation need not connote a single, specific structure; it may describe a broad class of structures, and even identify those structures by their function (*e.g.*, *filter, lock*). *See*, *e.g.*, *TecSec*, 731 F.3d at 1347.

Moreover, the specification expressly shows a controller coupled to the beam-deflecting elements. *See*, *e.g.*, FIGs. 4A & 4B. For example, in a preferred embodiment, a POSA would understand that a voltage control signal is sent from the processing unit 470 of the servo-control assembly 440 to channel micromirrors 430 as described in the '905 patent. ('905, 11:42-56).

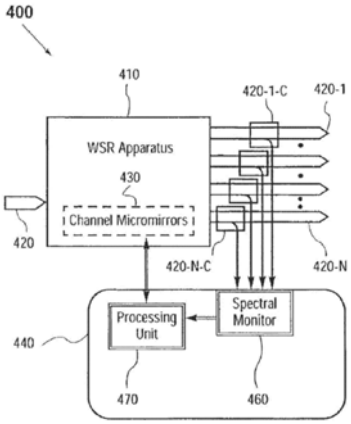
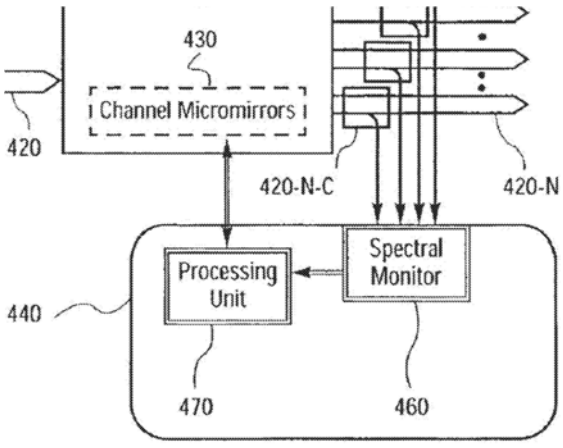


Fig. 4A



See Sergienko Decl., ¶¶110-11. *See also*, e.g., *Apple*, 757 at 1299-1300 (structure may also be provided by describing the claim limitation's operation, such as its input, output, or connections).

To the extent the Court finds this limitation of claim 24 subject to §112(f)/¶ 6, it is not indefinite. The corresponding structure is the same as that recited in the specification – which in preferred embodiments describes servo-control assemblies (440, 490) that include a processing unit (470, 495) and which states "[t]he processing unit 495 uses the power measurements from the spectral monitor 460 to provide dynamic control of the channel micromirrors 430…" ('905, 12:6-8). As is well known in the art, and shown in the patent figures, the processing unit receives inputs, processes them, and provides outputs; in this case to drive the beam-deflecting elements. The output drive from the processing unit is provided by a controller within the processing unit, as described in claim 24. As such, if the provisions of §112(f)/¶6 somehow apply, the claim covers controllers and equivalent structures. *See* Sergienko Decl., ¶¶115-19.

G. "A PROCESSING UNIT RESPONSIVE TO SAID POWER LEVELS FOR CONTROLLING SAID BEAM-DEFLECTING ELEMENTS"/ "A PROCESSING UNIT RESPONSIVE TO SAID POWER LEVELS FOR PROVIDING CONTROL OF SAID CHANNEL MICROMIRRORS" ('905: 25; '906: 70, 90, 117)

Capella's Proposed Construction	Defendants' Proposed Construction
Capella asserts that this term needs no construction. Further, Capella specifically disagrees that construction under 35 U.S.C. §112(f)/¶6 is appropriate. Plain and ordinary meaning or, if there is disagreement, a processor capable of manipulating each beam-deflecting element. Not indefinite. *See above* for beam deflecting elements.	35 U.S.C. § 112(6) applies as follows: Function: Responsive to said power levels for controlling said beam-deflecting elements responsive said power levels/responsive to said power levels for providing control of said channel micromirrors; Structure: Indefinite To the extent the court disagrees that 35 U.S.C. § 112(6) applies: A processing unit responsive to said power levels for [controlling (as construed) / providing control (as construed) of] said [beam-

	deflecting elements (as construed) / channel micromirrors (as construed)]

The parties also dispute whether these limitations of the '905 and '906 patents are subject to 35 U.S.C. §112(f)/¶6, and if so, whether there is corresponding structure in the specification. Again, because none of these claims use the word "means," 35 U.S.C. §112(f)/¶6 is presumed not to apply. The term "processing unit" also recites sufficiently definite structure to skilled artisans, namely a processor. A processor is a foundational building block of optical systems, and is well-known in the art. *See* Sergienko Decl., ¶¶120-21. It therefore needs no construction. In computing, a processor or processing unit is a digital circuit which performs operations on some external data source, usually memory or some other data stream. *See* Wanger Decl., Ex. 10 (https://en.wikipedia.org/wiki/Processor).

Moreover, the '905 and '906 patent specifications expressly show, and the claims contemplate, a controller that includes a servo 440, 490 that, in turn, includes a spectral monitor and a processing unit. (FIGs. 4A & B)('905, 11:30-56, 11:66-12:11, 12:22-36). For example, as discussed above, a POSA would understand that, in a preferred embodiment, a voltage control signal is sent from the processing unit of the servo control assembly 440 to channel micromirrors 430 as described in the patents. ('905, 11:42-56).

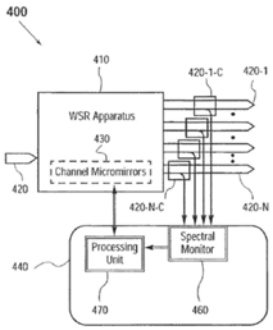
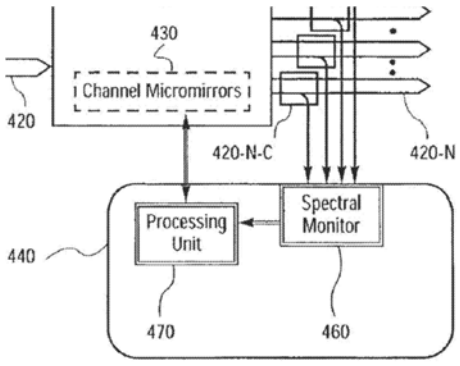


Fig. 4A



See Sergienko Decl., ¶¶122-23.

To the extent the Court finds any of these limitations subject to §112(f)/¶ 6, they are not indefinite. The '905 and '906 patent specifications in preferred embodiments describe processing unit 470, 495. ('905, 11:25-12:61). As such, if MPF somehow applies, the claim covers processing units (or processors) and equivalents. *See* Sergienko Decl., ¶¶126-30.

H. "A POWER-MANAGEMENT SYSTEM CONFIGURED TO MANAGE POWER LEVELS OF AT LEAST ONE OF THE FIRST SPECTRAL CHANNELS AND THE SECOND SPECTRAL CHANNELS" ('905: 44)

Capella's Proposed Construction	Defendants' Proposed Construction
Capella asserts that this term needs no construction. Further, Capella specifically disagrees that construction under 35 U.S.C. §112(f)/¶6 is appropriate. Plain and ordinary meaning or, if there is disagreement, a controller (manager) to manage power levels Not indefinite.	35 U.S.C. § 112(6) applies as follows: Function: manage power levels of at least one of the first spectral channels and the second spectral channels; Structure: Indefinite To the extent the court disagrees that 35 U.S.C. § 112(6) applies: Plain and ordinary meaning.

The parties dispute whether this limitation of the '905 patent is subject to 35 U.S.C. §112(f)/¶6, and if so, whether there is corresponding structure in the specification.

Once again, claim 44 does not use the word "means," and it is thus presumed that the provisions of 35 U.S.C. §112(f)/¶6 do not apply. The term "power-management system" also recites sufficiently definite structure to skilled artisans. *See* Sergienko Decl., ¶¶131-32. It therefore needs no construction.

Moreover, the '905 patent specification shows a servo-control assembly 490 that includes a spectral monitor and processing unit for controlling power. For example, in the preferred embodiment, the servo 490 is configured to manage power levels of the spectral channels as claimed. *See* FIGs 4 A & 4B; '905, 11:25-12:61.

To the extent the Court finds this limitation subject to §112(f)/¶ 6, it is not indefinite. The '905 patent specification in preferred embodiments describe a servo with processing units 470, 495. ('905, 11:25-12:61). The processor is configured to manage power levels as claimed.

I. "A SERVO-CONTROL ASSEMBLY…FOR MONITORING POWER LEVELS OF SELECTED ONES OF SELECTED CHANNELS"/"A SERVO-CONTROL ASSEMBLY …FOR PROVIDING CONTROL OF SAID CHANNEL MICROMIRRORS AND THEREBY MAINTAINING A PREDETERMINED COUPLING OF EACH REFLECTED SPECTRAL CHANNEL INTO ONE OF SAID FIBER COLLIMATOR OUTPUT PORTS"/"A SERVO-CONTROL ASSEMBLY…FOR MAINTAINING A PREDETERMINED COUPLING OF EACH REFLECTED SPECTRAL CHANNEL INTO ONE OF SAID FIBER COLLIMATOR OUTPUT PORTS"/"A SERVO-CONTROL ASSEMBLY, IN COMMUNICATION WITH SAID CHANNEL MICROMIRRORS AND SAID OUTPUT PORTS, FOR PROVIDING CONTROL OF SAID CHANNEL MICROMIRRORS AND THEREBY MAINTAINING A PREDETERMINED COUPLING OF EACH REFLECTED SPECTRAL CHANNEL INTO ONE OF SAID OUTPUT PORTS" ('905: 25; '906: 69, 89, 116)

Capella's Proposed Construction	Defendants' Proposed Construction
Capella asserts that this term needs no construction. Further, Capella specifically disagrees that construction under 35 U.S.C. §112(f)/¶6 is appropriate. Plain and ordinary meaning or, if there is disagreement, a servo in the art is a controller that uses feedback to control power. An assembly is a collection of parts or components. Not indefinite.	35 U.S.C. § 112(6) applies as follows: Function: monitoring power levels of selected ones of said spectral channels/providing control of said channel micromirrors and thereby maintaining a predetermined coupling of each reflected spectral channel into one of said fiber collimator output ports/maintaining a predetermined coupling of each reflected spectral channel into one of said fiber collimator output port/providing control of said channel micromirrors and thereby maintaining a predetermined coupling of each reflected spectral channel into one of said output ports; Structure: Indefinite To the extent the court disagrees that 35 U.S.C. §112(6) applies: Plain and ordinary meaning.

The parties dispute whether the "servo-control assembly" limitations of the '905 and '906 patents are subject to 35 U.S.C. §112(f)/¶6, and if so, whether there is corresponding structure in the specification. Yet again, because none of these claims use the word "means," the provisions of 35 U.S.C. §112(f)/¶6 are presumed not to apply.

Further, at least claim 25 of the '905 patent does not recite a function for the "servo-control assembly" to perform. Claim 25 specifies that the "servo-control assembly" includes a "spectral monitor for monitoring power levels" of certain spectral channels. Thus, the alleged function ("monitoring power levels") is performed by the "spectral monitor," not the "servo-control assembly" (although the "servo-control assembly" includes the "spectral monitor").

The term "servo-control assembly" also recites sufficiently definite structure to skilled artisans, namely a servo. A servo is a foundational building block of optical systems, and is well-known in the art. Servos provide corrective control based on feedback. *See* Sergienko Decl., ¶¶141 & 143. It therefore needs no construction.

Moreover, the '905 and '906 patent specifications expressly show, and the claims contemplate, a servo-control assembly that includes a spectral monitor and a processing unit. *See* FIGs. 4A & 4B; '905, 11:25-12:50; '905, claim 25; '906, claims 70, 90 & 117). *See also*, Wanger Decl., Ex. 11 (https://www.merriam-webster.com/dictionary/assembly)(a collection of parts that have been fitted together into a complete machine, structure, or unit of a machine).

To the extent the Court finds any of these limitations subject to §112(f)/¶ 6, they are not indefinite. The patent specifications in preferred embodiments describe spectral monitor 460 and processing units 470, 495. ('905, 11:25-12:61). As such, if MPF somehow applies, the claims cover spectral monitors and processing units and equivalents. *See* Sergienko Decl., ¶¶146-48.

J. "CHANNEL MICROMIRROR[S]"/ "MIRROR[S]"/ "MICROMIRROR[S]"/ "MICROMACHINED MIRROR[S]" ('905: 29, 35, 46; '906: 68–70, 79, 82, 85, 89, 90, 96, 100, 115–117, 122, 123, 125, 126, 127, 129)

Capella's Proposed Construction	Defendants' Proposed Construction
Mirrored or reflective surfaces for reflecting light. One of ordinary skill in the art would understand "micromirrors" and "micromachined mirrors" to mean small mirrored or reflective surfaces for reflecting light. A "channel micromirror," in light of the specifications and claims, means a small mirror or reflective surfaces that are positioned to receive one of the spectral channels.	[a movable mirror] / [moveable mirrors, each] assigned to a specific spectral channel.

Various claims recite "mirrors," "micromirrors," "micromachined mirrors," or "channel micromirrors." A POSA, in light of the specification and claims, would understand "mirrors" to be mirrored or reflective surfaces for reflecting light.

Defendants attempt to limit these terms to moveable mirrors that are each "assigned to a specific spectral channel." However, there is nothing in the specification that supports such a narrow construction.

A POSA, in light of the specification and claims, would also understand "micro" to mean small – so that "micromirrors" and "micromachined mirrors" would be understood to be small mirrored or reflective surfaces for reflecting light. *See* Sergienko Decl., ¶150. Again, there is nothing in the specification or claims that would limit either of these terms to movable mirrors and/or mirrors assigned to a specific spectral channel.

Finally, a POSA would understand a "channel micromirror," in light of the specification and claims, to be a small mirror or reflective surfaces that are positioned to receive one of the spectral channels. *See, e.g.*, '905, 4:9-16 ("The channel micromirrors are positioned such that each channel micromirror receives one of the spectral channels… As such, each channel micromirror is assigned to a specific spectral channel, hence the name "channel micromirror"); '905, 9:22-25 ("The channel micromirrors may be provided by silicon micromachined mirrors,

reflective ribbons (or membranes), or other types of beam-deflecting elements known in the art"). *See also*, Sergienko Decl., ¶151. Yet again, there is nothing in the specification or claims that would limit this term to movable mirrors and/or mirrors assigned to a specific spectral channel.

K. "CORRESPONDING" ('905: 23, 47, 49, 51, 52, 54; '906: 68, 89, 100, 115, 133)

Capella's Proposed Construction	Defendants' Proposed Construction
Capella asserts that this term needs no construction. Plain and ordinary meaning or, if there is disagreement, assigned.	In one-to-one correspondence.

Various claims of the '905 and '906 patents use the term "corresponding" in different contexts. For example, at least claims 23, 47, and 49 of the '905 patent recite the positioning of certain BDE such that each receives "a corresponding one" of said spectral channels. As another example, at least claim 51 of the '905 patent recites imaging of each spectral channel onto "a corresponding" BDE. As a third example, at least claim 54 of the '905 patent recites controlling an alignment between an input multi-wavelength optical signal and "corresponding" BDEs. As a fourth example, at least claims 68, 89, 100, and 115 of the '906 patent recite a beam-focuser, for focusing spectral channels into "corresponding" spectral spots. And, as a fifth example, at least claim 133 of the '906 patent recites focusing certain spectral channels onto a spatial array of "corresponding" BDEs, whereby each element receives "one of said spectral channels."

A POSA, in light of the specification and claims, would therefore understand that "corresponding" is used in its normal sense – and is not limited, as Defendants contend, to "one to one correspondence." Indeed, in at least the third example above (claim 54 of the '905 patent), there is clearly no "one-to-one correspondence" between the input multi-wavelength

signal (singular) and the "corresponding" beam-deflecting elements (plural). Moreover, if one-to-one correspondence was required, certain other examples above would arguably contain superfluous language (*e.g.*, the fifth example, claim 133 of the '906 patent, which specifies that each "corresponding" beam-deflecting element receives "one of said spectral channels").

This is also confirmed by the '905 and '906 patent specifications, which also fail to limit "corresponding" to "one-to-one correspondence." *See*, *e.g.*, '905, 7:42-45 ("For example, the input beam and the corresponding diffracted beams generally have different cross-sectional shapes…"); '905, 7:57-61 ("Moreover, the input multi-wavelength optical signal is preferably collimated and circular in cross-section. The corresponding spectral channels diffracted from the diffraction grating 101 are generally elliptical in cross-section…"). The specifications also expressly use the phrase "one-to-one correspondence" when such a meaning is intended. *See*, *e.g.*, '905,10:2-9 & 13:16-21. *See also,* Sergienko Decl., ¶¶152-54.

L. <u>"SAID ELEMENTS BEING INDIVIDUALLY…CONTROLLABLE"/ "SAID CHANNEL MICROMIRRORS…BEING INDIVIDUALLY…CONTROLLABLE"/ "SAID CHANNEL MICROMIRRORS BEING INDIVIDUALLY CONTROLLABLE"/"SAID CHANNEL MICROMIRRORS BEING INDIVIDUALLY…CONTROLLABLE"/"SAID AUXILIARY CHANNEL MICROMIRRORS ARE INDIVIDUALLY PIVOTABLE"</u> ('905: 23, 47, 49; '906: 68, 89, 100, 115, 127)

Capella's Proposed Construction	Defendants' Proposed Construction
No further construction is necessary. Plain and ordinary meaning.	Each [channel micromirror (as construed)/ beam-deflecting element (as construed)] being [controlled (as construed) /pivoted] separately from all other [channel micromirrors (as construed)/beam-deflecting elements (as construed)].

Finally, certain claims of the '905 and '906 patents recite that each element of the spatial array of BDEs or each channel micromirror of the spatial array of channel micromirrors are "individually" and continuously controllable (or are at least "individually" controllable). And,

claim 127 of the '906 patent recites that certain auxiliary channel micromirrors are individually pivotable. Like "continuously," "individually" is an adverb that modifies "controllable," and is used in a normal sense to mean that each element can be controlled.

Contrary to Defendants' proposed construction, use of the term "individually" does not mean each BDE/channel micromirror must be controlled "separately from all other" BDEs/ channel micromirrors. That is an additional limitation not set forth in the claims. Nor is it compelled by "individually." Although BDEs are capable of being controlled separately from all other BDEs, separate control is not required for the BDEs to reflect the spectral channels into selected ones of the output ports. *See*, *e.g.*, '905, 4:11-14 ("The channel micromirrors are individually controllable and movable, *e.g.*, continuously pivotable (or rotatable), so as to reflect the spectral channels into selected ones of the output ports"); '905, 5:64-6:2 ("By advantageously employing an array of channel micromirrors that are individually and continuously controllable, an OADM of the present invention is capable of routing the spectral channels on a channel-by-channel basis and directing any spectral channel into any one of the output ports"). *See also*, Sergienko Decl., ¶¶155-56.

VI. CONCLUSION

For the reasons detailed above, the Court should adopt Capella's proposed constructions and reject those constructions proffered by Defendants.

Dated: December 8, 2020

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that the foregoing document was filed electronically in compliance with Local Rule CV-5(a). As such, this notice was served on all counsel of record who have consented to electronic service on this 8th day of December, 2020.

/s/ *Robert D. Becker*
Robert D. Becker